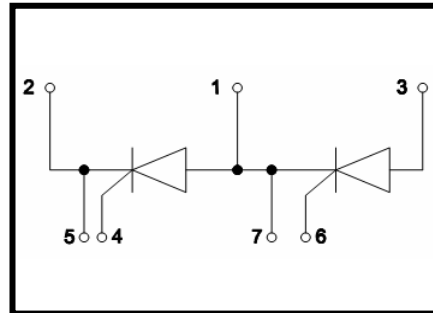


**Features**

- Isolation voltage 3500 V~
- Industrial Standard Package
- High Surge Capability
- Glass Passivated Chips
- Simple Mounting
- Electrically Isolated by DBC Ceramic


**Applications**

- DC Motor Control and Drives
- Battery Charges
- Welders
- Power Converters
- Lighting Control
- Heat and Temperature Control


**Advantages**

- Space and weight savings
- Improved temperature and power cycling

**ABSOLUTE MAXIMUM RATINGS**
 $T_C=25^{\circ}\text{C}$  unless otherwise specified

Symbol	Test Condition	Value	Unit
$V_{RRM}$		1600	V
$I_{T(AV)}$	$T_C=85^{\circ}$ , 180° conduction, half sine wave;	130	A
$I_{T(RMS)}$	as AC switch;	300	A
$I_{TSM}$	$T_J=45^{\circ}$ , $t=10\text{ms}$ (50Hz), sine, $V_R=0$ ;	3200	A
	$T_J=45^{\circ}$ , $t=8.3\text{ms}$ (60Hz), sine, $V_R=0$ ;	3360	
	$T_J=45^{\circ}$ , $t=10\text{ms}$ (50Hz), sine, $V_R=V_{RRM}$ ;	2700	
	$T_J=45^{\circ}$ , $t=8.3\text{ms}$ (60Hz), sine, $V_R=V_{RRM}$ ;	2800	
$I^2t$	$T_J=45^{\circ}$ , $t=10\text{ms}$ (50Hz), sine, $V_R=0$ ;	52	K A <sup>2</sup> s
	$T_J=45^{\circ}$ , $t=8.3\text{ms}$ (60Hz), sine, $V_R=0$ ;	57	
	$T_J=45^{\circ}$ , $t=10\text{ms}$ (50Hz), sine, $V_R=V_{RRM}$ ;	37	
	$T_J=45^{\circ}$ , $t=8.3\text{ms}$ (60Hz), sine, $V_R=V_{RRM}$ ;	39	
$I_{DRM}/I_{RRM}$	$T_J=125^{\circ}$ , $V_D=V_R=1600\text{V}$ ;	50	mA
dV/dt	$T_J=125^{\circ}$ , exponential to 67% rated $V_{DRM}$	1000	V/us
$V_{ISOL}$	50Hz, all terminals shorted, $t=1\text{s}$ , $I_{ISOL}\leq 1\text{mA}$ ;	3500	V~
$T_J$	Max. junction operating temperature range	-40~125	
$T_{STG}$	Max. storage temperature range	-40~150	°C

## MIMMK130S160B

### ELECTRICAL CHARACTERISTICS

$T_C=25^{\circ}\text{C}$  unless otherwise specified

Symbol	Test Condition	Min.	Typ.	Max.	Unit
$V_{TO}$	$16.7\% \times I_{AV} < I < I_{AV}, T_J = 130^{\circ}\text{C};$			0.86	V
	$I > I_{AV}, T_J = 130^{\circ}\text{C};$			1.05	V
$r_t$	$16.7\% \times I_{AV} < I < I_{AV}, T_J = 130^{\circ}\text{C};$			2.02	m $\Omega$
	$I > I_{AV}, T_J = 130^{\circ}\text{C};$			1.65	m $\Omega$
$I_H$	$V_{AK} = 6\text{V}, \text{initial } I_T = 30\text{A};$			200	mA
$I_L$	Anode supply =6V, resistive load=1 $\Omega$ , gate pulse =10V, 100us;			400	mA
$V_{TM}$	$I_{TM} = 408\text{A}, t_d = 10 \text{ms}, \text{half sine};$		1.57		V
$P_{GM}$	$t_p \leq 5\text{ms}, T_J = 125^{\circ}\text{C};$			12	W
$P_{GM(AV)}$	$f = 50\text{Hz}, T_J = 125^{\circ}\text{C};$			3	W
$I_{GM}$	$t_p \leq 5\text{ms}, T_J = 125^{\circ}\text{C};$			3	A
$-V_{GT}$				10	V
$V_{GT}$	$V_A = 6\text{V}, R_A = 1\Omega, T_J = -40^{\circ}\text{C};$			4	V
	$V_A = 6\text{V}, R_A = 1\Omega;$			2.5	
	$V_A = 6\text{V}, R_A = 1\Omega, T_J = 125^{\circ}\text{C};$			1.7	
$I_{GT}$	$V_A = 6\text{V}, R_A = 1\Omega, T_J = -40^{\circ}\text{C};$			270	A
	$V_A = 6\text{V}, R_A = 1\Omega;$			150	
	$V_A = 6\text{V}, R_A = 1\Omega, T_J = 125^{\circ}\text{C};$			80	
$V_{GD}$	$V_{AK} = V_{DRM}, T_J = 125$			0.3	V
$I_{GD}$				10	mA
di/dt	$I_{TM} = 400\text{A}, \text{rated } V_{DRM}, T_J = 125$			300	A/us

### THERMAL AND MECHANICAL CHARACTERISTICS

$T_C=25^{\circ}\text{C}$  unless otherwise specified

Symbol	Test Condition	value	Unit
$R_{thjc}$	DC operation, per junction;	0.20	K/W
$R_{THCS}$	Mounting surface smooth, flat and greased, per junction;	0.1	K/W
Md	Mounting torque(M6)	4 to 6	N·m
	Terminal connection torque(M6)		
Weight	Typical value	156	g

Characteristic curves

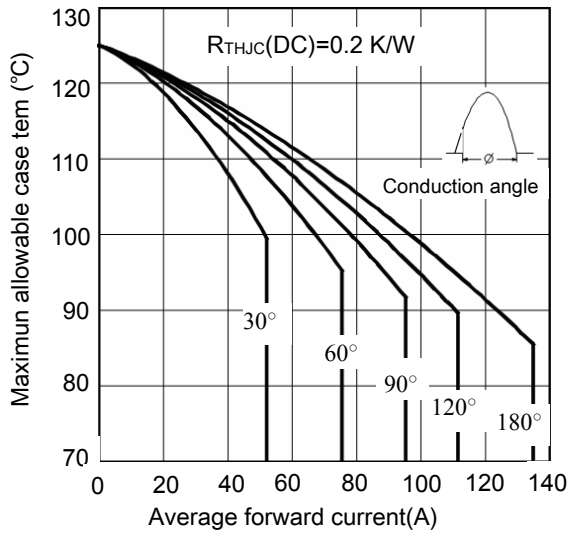


Figure 1. current rating characteristics

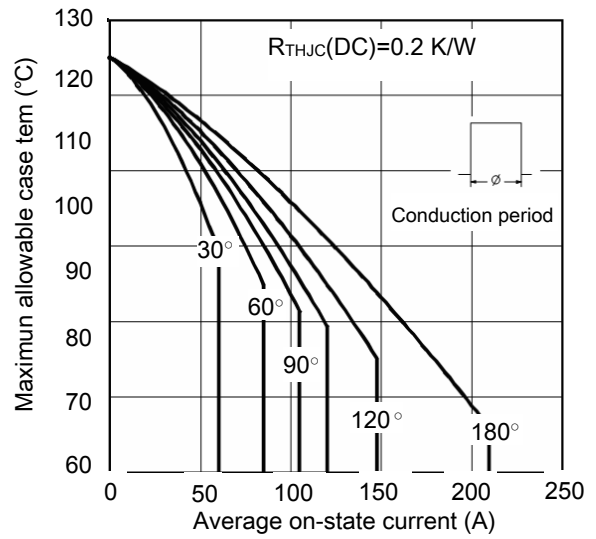


Figure 2. current rating characteristics

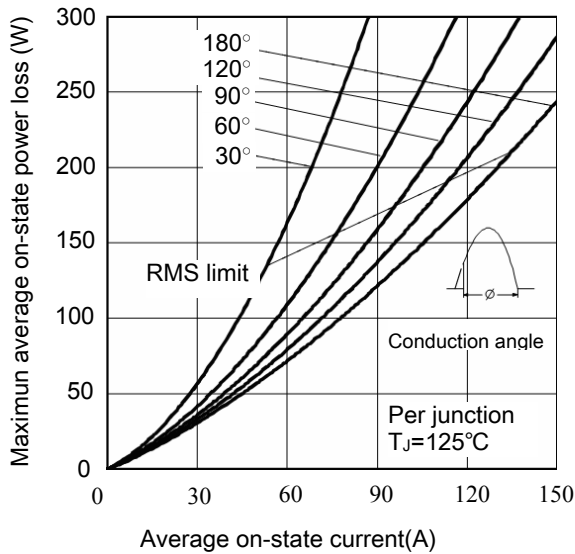


Figure 3. on-state power loss characteristics

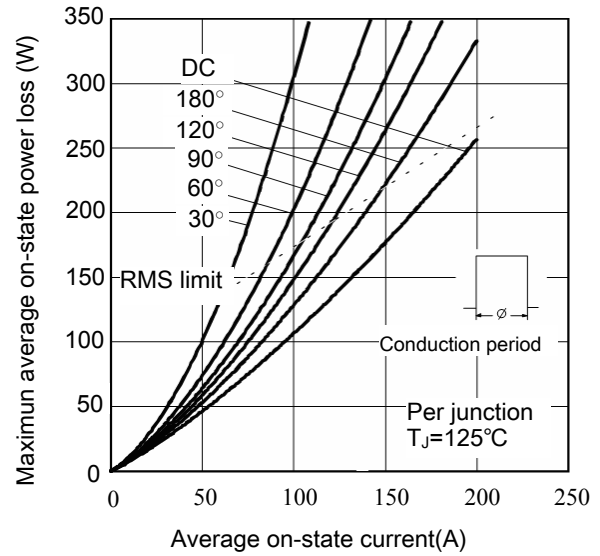


Figure 4. on-state power loss characteristics

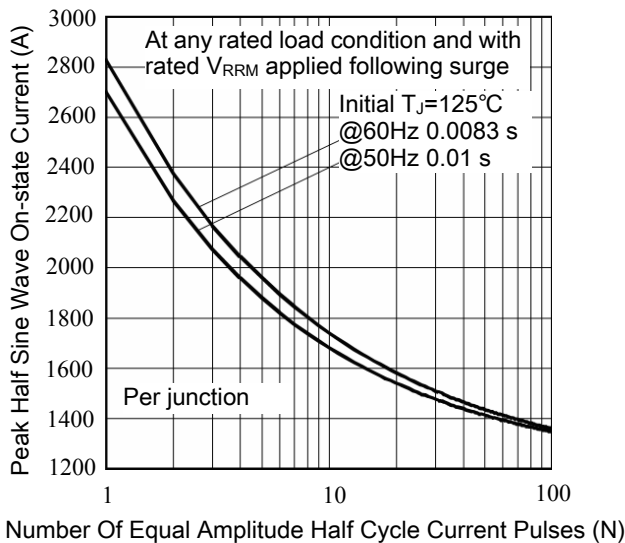


Figure 5. Maximum Non-Repetitive Surge Current

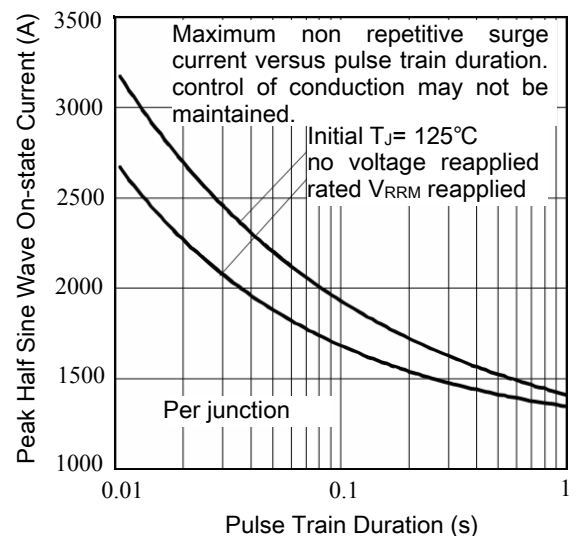


Figure 6. Maximum Non-Repetitive Surge Current

# MIMMK130S160B

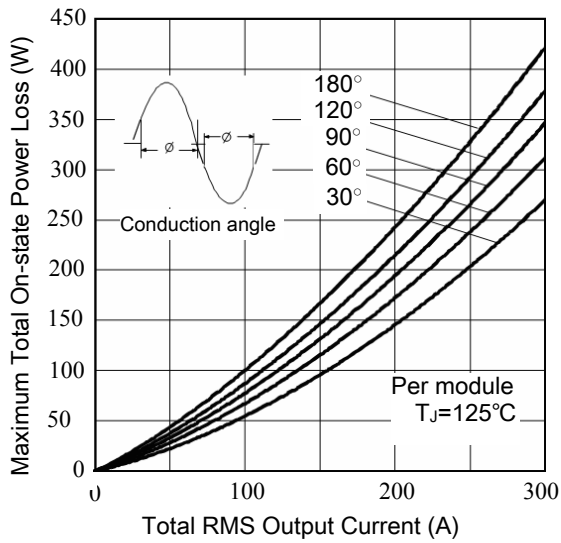


Figure 7. On-State Power Loss Characteristics-1

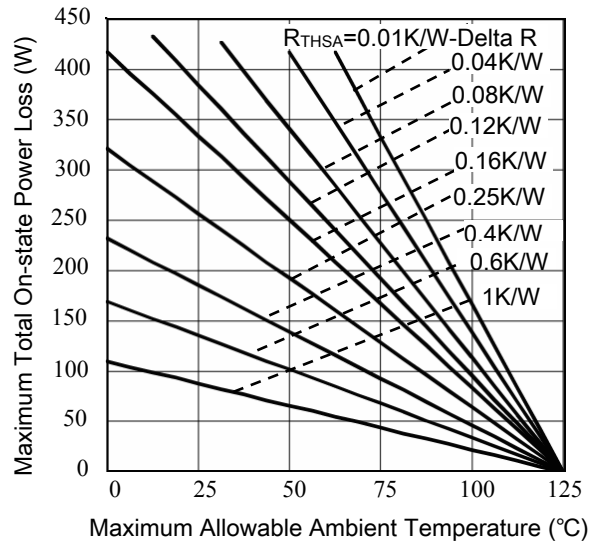


Figure 8 On-State Power Loss Characteristics-2

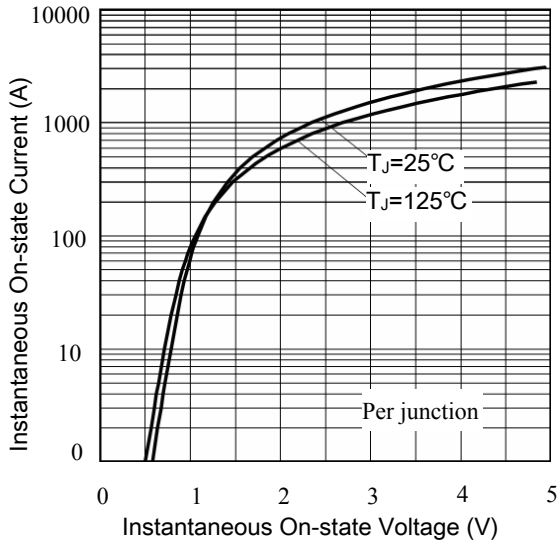


Figure.9 On State Voltage Drop Characteristics

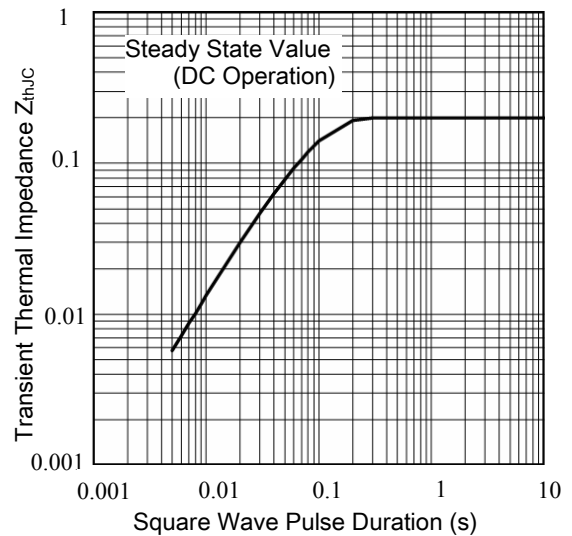


Figure.10 Thermal Impedance ZthJC Characteristics

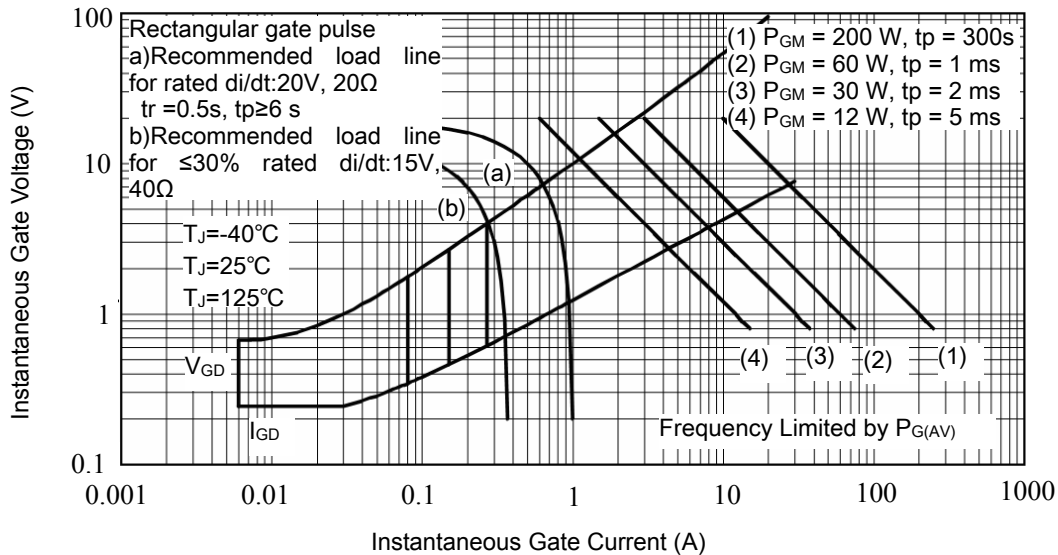


Figure.11 Gate Characteristics

Package Outline (Dimensions in mm)

